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PRICE $1.00

HEATH COMPANY · BENTON HARBOR, MICHIGAN

HEATHKIT®
ASSEMBLY MANUAL

HEATHKIT® by DAYSTROM

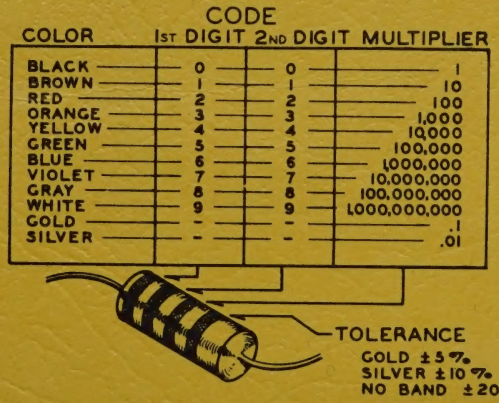
MOBILE TUNING METER
MODEL PM-2

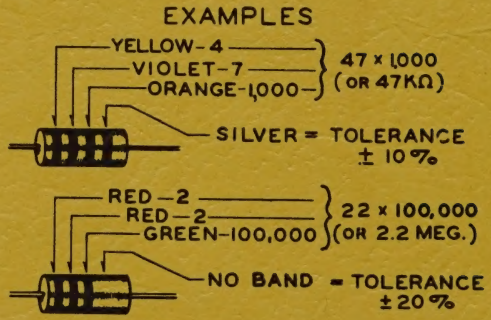
RESISTOR COLOR CODES

The colored bands around the body of a color coded resistor represent its value in ohms. These colored bands are grouped toward one end of the resistor body. Starting with this end of the resistor, the first band represents the first digit of the resistance value; the second band represents the second digit; the third band represents the number by which the first two digits are multiplied. A fourth band of gold or silver represents a tolerance of ±5% or ±10% respectively. The absence of a fourth band indicates a tolerance of ±20%.

The physical size of a composition resistor is related to its wattage rating. Size increases progressively as the wattage rating is increased. The diameters of 1/2 watt, 1 watt and 2 watt resistors are approximately 1/8", 1/4" and 5/16", respectively.

The color code chart and examples which follow provide the information required to identify color coded resistors.





USING A PLASTIC NUT STARTER

A plastic nut starter offers a convenient method of starting the most used sizes: 3/16" and 1/4" (3-48 and 6-32). When the correct end is pushed down over a nut, the pliable tool conforms to the shape of the nut and the nut is gently held while it is being picked up and started on the screw. The tool should only be used to start the nut.

ATH COMPANY
N HARBOR, MICHIGAN 49023
3961 TWX-616-983-3897

December 28, 1964

n your Heathkit PM-2 Tuning Meter

s follows:

of the 100 KΩ potentiometer. Tighten

x 1/8" slot head setscrew

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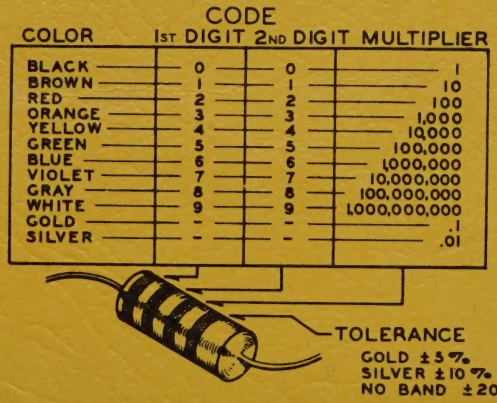

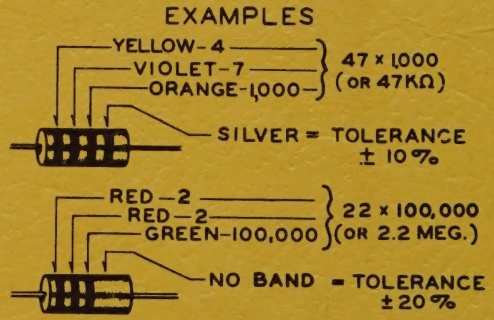

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HEATHKIT®

HEATH COMPANY

BENTON HARBOR, MICHIGAN 49023
YUKON 3-3961 TWX-616-983-3897

December 28, 1964

Dear Customer:

Please make the following changes in your Heathkit PM-2 Tuning Meter Manual before starting assembly.

Page 9 - Change the first step to read as follows:

( ) Mount the knob on the shaft of the 100 KΩ potentiometer. Tighten the setscrew.

Page 12 - In the Parts List,

Delete:	250-15	1	8-32 x 1/8" slot head setscrew
Change:	462-130	1	9/16" control knob
To:	462-30	1	Knob

Thank you,

HEATH COMPANY

12-28-64
PM-2

HEATHKIT®

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BENTO
YUKON 3

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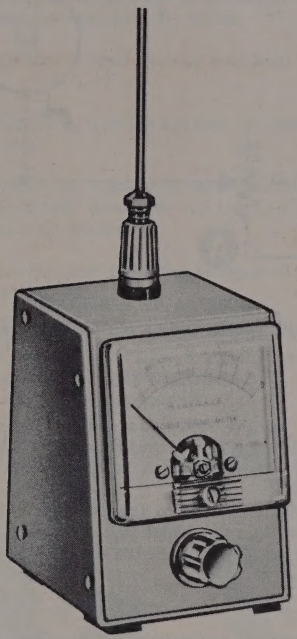
ASSEMBLY AND OPERATION OF THE HEATHKIT MOBILE TUNING METER

MODEL PM-2



SPECIFICATIONS

Useful with transmitters of any power level. No electricity or batteries required.

Frequency Range:	100 kc to over 250 megacycles.
Sensitivity:	0.3 volts RMS at antenna input terminal for full scale deflection, sensitivity control on panel.
Meter:	200 microamperes full scale.
Dimensions:	2 3/8" wide x 2 5/8" deep x 3 1/2" high.
Net Weight:	12 oz.
Shipping Weight:	2 lbs.

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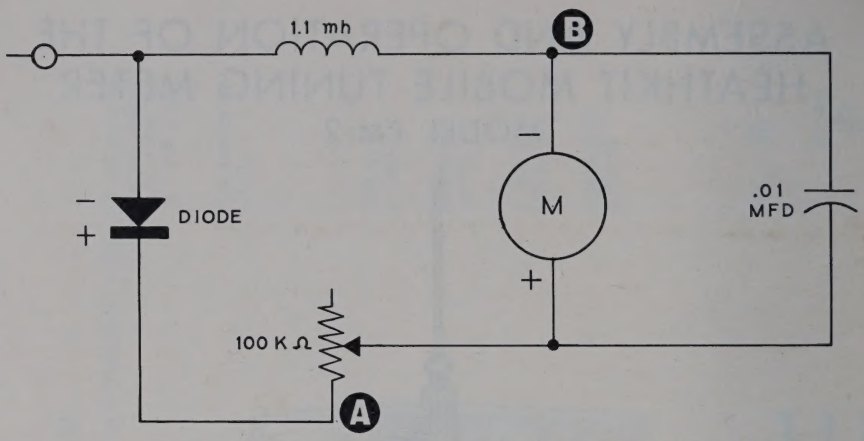
Heath Company

8/10/62



SCHEMATIC DIAGRAM
Heathkit Mobile Tuning Meter Model PM-2

DESCRIPTION

The Heathkit Model PM-2 Mobile Tuning Meter is a sensitive portable instrument for the measurement of relative power output of mobile transmitters. The signal radiated by the transmitter supplies the necessary operating power; no other power is required.

While designed expressly to serve as a mobile transmitter tuning meter, the PM-2 finds application in fixed station use as well as an output indicator for any transmitter. The magnet is incorporated to secure the unit to an auto dashboard or other metal surface.

PROPER SOLDERING TECHNIQUES

Only a small percentage of Heathkit purchasers find it necessary to return an instrument for factory service. Of these kits, by far the largest proportion of malfunctions are due to poor or improper soldering.

If terminals are bright and clean and free of wax, frayed insulation and other foreign substances, no difficulty will be experienced in soldering. Correctly soldered connections are essential if the performance engineered into a kit is to be fully realized. If you are a beginner with no experience in soldering, a half hour's practice with some odd lengths of wire may be a worthwhile investment.

For most wiring in this kit, a 30 to 100 watt iron or its equivalent in a soldering gun is very satisfactory. A lower wattage iron than this may not heat the connection enough to flow the solder smoothly over the joint. Keep the iron tip clean and bright by wiping it from time to time with a piece of cloth.

SOLDERING PROCEDURE

1. If the connection is to be made with hookup wire, strip 3/8" of insulation from the end to be connected, unless otherwise directed.

2. Crimp or bend the lead (or leads) around the terminal to form a good joint without relying on solder for physical strength. If the wire is too large to allow bending, position the wire so that a good solder connection can still be made.

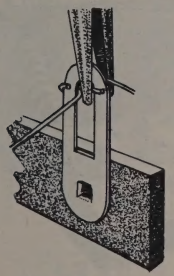
3. Position the work, if possible, so that gravity will help to keep the solder where you want it.

4. Place a flat side of the soldering iron tip against the joint to be soldered until it is heated sufficiently to melt the solder.

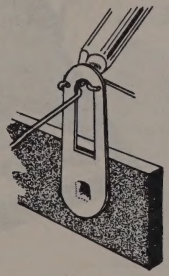
5. Then place the solder against the heated terminal, using only enough solder to cover the junction, and it will immediately flow over the joint; it is usually not necessary to fill the entire hole in the terminal with solder.

6. Remove the solder and then the iron from the completed junction. Use care not to move the leads until the solder is solidified.

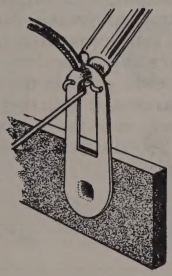
A poor or cold solder joint will usually look crystalline and have a grainy texture, or will stand up in a blob, and will not have adhered to the joint. Such joints should be reheated until the solder flows smoothly over the entire junction. In some cases, it may be necessary to add a little more solder to achieve a smooth, bright appearance.



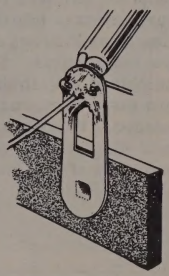
CRIMP WIRES



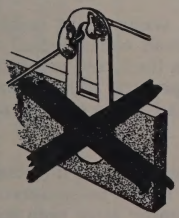
HEAT CONNECTION



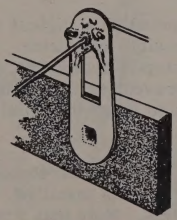
APPLY SOLDER



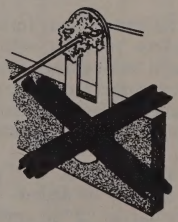
ALLOW SOLDER TO FLOW



COLD SOLDER JOINT CONNECTION INSUFFICIENTLY HEATED



PROPER SOLDER CONNECTION



COLD SOLDER JOINT CONNECTION MOVED WHILE COOLING

NOTE: ALL GUARANTEES ARE VOIDED AND WE WILL NOT REPAIR OR SERVICE INSTRUMENTS IN WHICH ACID CORE SOLDER OR PASTE FLUXES HAVE BEEN USED. WHEN IN DOUBT ABOUT SOLDER, IT IS RECOMMENDED THAT A NEW ROLL PLAINLY MARKED "ROSIN CORE RADIO SOLDER" BE PURCHASED.

We suggest that you do the following before work is started:

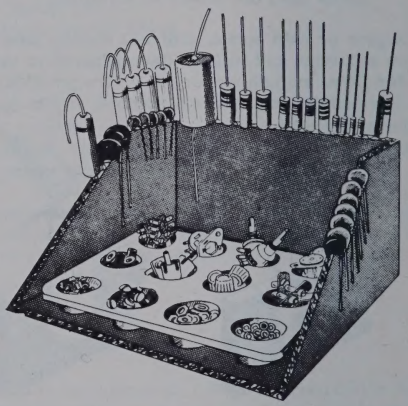
1 Attach the large fold-in pictorials to the wall above your work bench.

2. Go through the entire assembly and wiring instructions to familiarize yourself with the procedures.

3. Lay out all parts so they are readily available.

UNPACK THE KIT CAREFULLY AND CHECK EACH PART AGAINST THE PARTS LIST. In so doing, you will become acquainted with the parts. Refer to the charts and other information shown on the inside covers of your manual to help you identify the components. If some shortage or parts damage is found in checking the Parts List, please read the REPLACEMENT section and supply the information called for therein, and include all inspection slips in your letter to us.

Most kit builders find it helpful to separate the various parts into convenient categories. Muffin tins or molded egg cartons make convenient trays for small parts. Resistors and capacitors may be placed with their lead ends stuck in the edge of a piece of corrugated cardboard until they are needed. Values can be written on the cardboard next to each component. The illustration shows one method that may be used.



STEP-BY-STEP PROCEDURE

The following instructions are presented in a logical step-by-step sequence to enable you to complete your kit with the least possible confusion. Be sure to read each step all the way through before beginning. When the step is completed, check it off in the space provided. This is particularly important as it may prevent errors or omissions, especially if your work is interrupted. Some kit builders have also found it helpful to mark each lead in colored pencil on the pictorial as it is added.

The abbreviation "NS" indicates that a connection should not be soldered as yet for other wires may need to be added. When the last wire is installed, the terminal should be soldered and the abbreviation "S" is used to indicate this. Note that a number will appear after each solder instruction. This number indicates the number of leads that are supposed to be connected to the terminal in question before it is soldered. For example, if the instruction reads, "Connect one lead of a 47 K ohm resistor to lug 1 (S-2)", it will be understood that there will be two leads connected to the terminal at the time it is soldered. This additional check will help avoid errors.

start

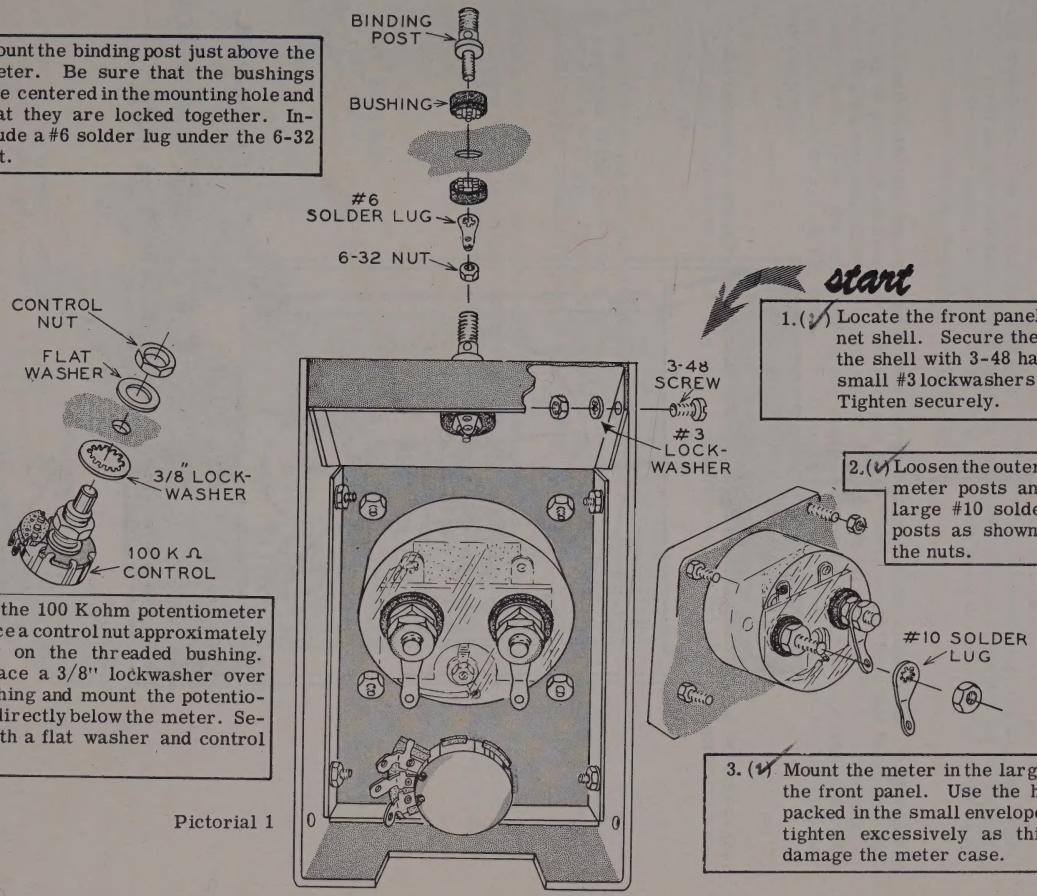
1. (✓) Locate the front panel and the cabinet shell. Secure the front panel to the shell with 3-48 hardware. Use small #3 lockwashers under the nuts. Tighten securely.

2. (✓) Loosen the outer nuts from the meter posts and position the large #10 solder lugs on the posts as shown, then tighten the nuts.

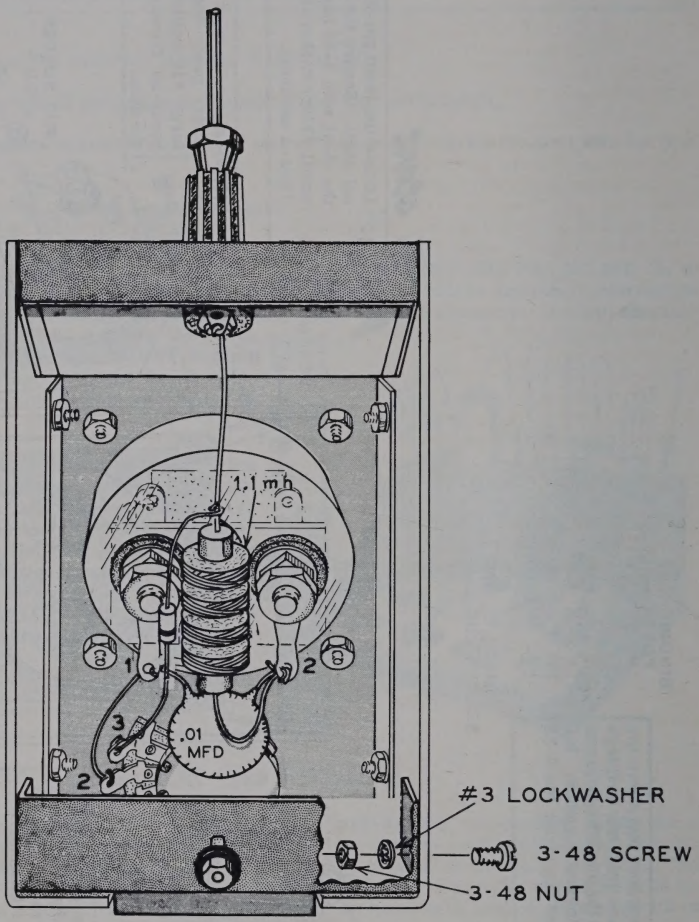
3. (✓) Mount the meter in the large hole in the front panel. Use the hardware packed in the small envelope. Do not tighten excessively as this could damage the meter case.

4. (✓) Locate the 100 Kohm potentiometer and place a control nut approximately midway on the threaded bushing. Now place a 3/8" lockwasher over the bushing and mount the potentiometer directly below the meter. Secure with a flat washer and control nut.

5. (✓) Mount the binding post just above the meter. Be sure that the bushings are centered in the mounting hole and that they are locked together. Include a #6 solder lug under the 6-32 nut.



Pictorial 1



Pictorial 2

( ) Slip one end of a .01 disc ceramic capacitor through lug 1 on the meter and connect to lug 2 on the 100 K ohm potentiometer. Solder both connections. Connect the other end of the capacitor to lug 2 on the meter (NS). See Pictorial 2.

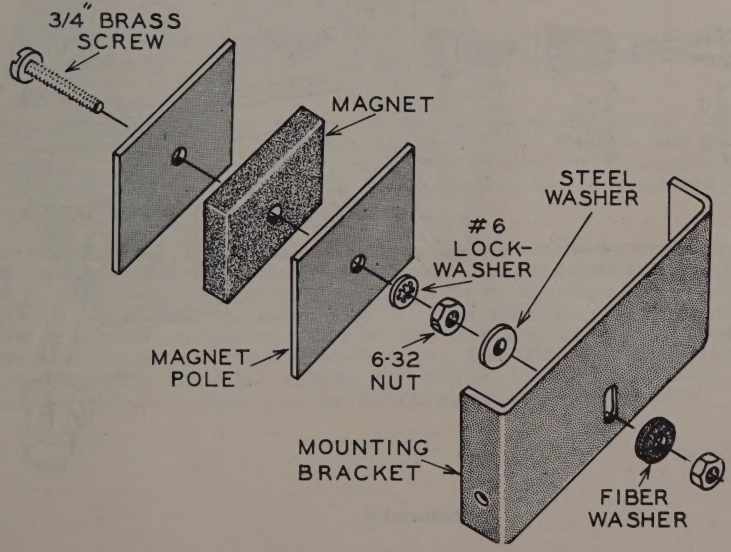
( ) Cut both leads of the 1.1 mh RF choke to 1 1/8" and connect one lead to lug 2 on the meter (S-2). Position as shown and connect the other end of the choke to the solder lug on the binding post directly above the meter (S-1). The RF choke must lie between the meter studs for clearance when the magnet bracket is tilted.

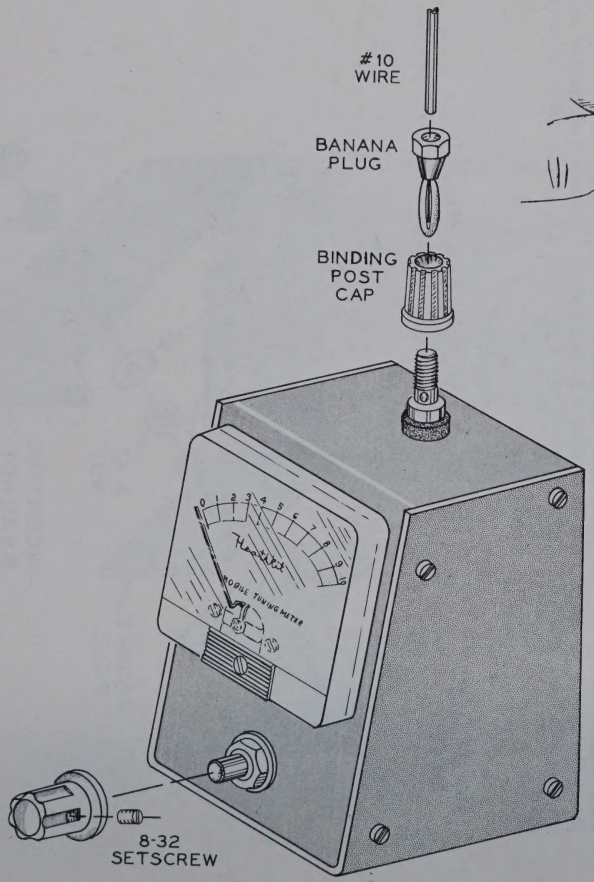
( ) The small diode will be mounted at this time. Do not shorten either lead. Solder it as rapidly as possible as diodes can be damaged by excessive heat. Note that there is a red band nearest one end. Connect the end with the red band to lug 3 on the 100 K ohm potentiometer (S-1). Dress the other end up and clear of any other wiring or lugs and connect to the far end of the 1.1 mh RF choke. Wrap the diode lead around the choke lead and solder the connection.

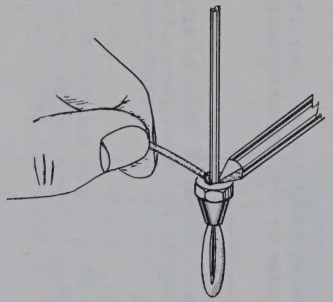
( ) Locate the magnet mounting bracket and mount it in the remaining two holes at the rear of the cabinet shell. Use 3-48 screws and place lockwashers under the nuts. Do not tighten securely as yet.

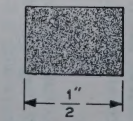
( ) Locate the two magnet pole pieces, the 3/4" brass screw and the magnet. Place the screw through one of the pole pieces, through the magnet, through the second pole piece and secure with a 6-32 nut. Use a #6 lockwasher under the nut. The pole pieces should extend past the magnet on all sides and be aligned parallel to it.

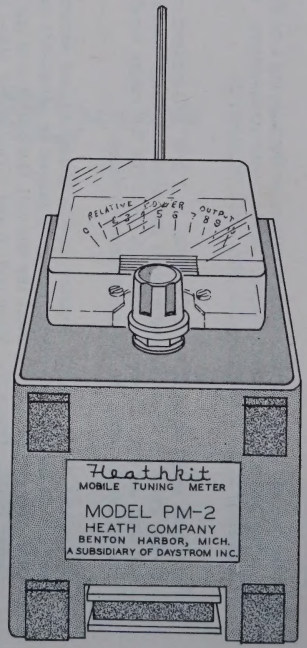
( ) Place a steel washer over the brass screw and insert the above magnet assembly through the slotted hole in the magnet mounting bracket from the inside. Place a fiber washer over the screw on the outside of the bracket and secure with a 6-32 nut. Do not tighten securely as yet.




#10
WIRE
BANANA
PLUG
BINDING
POST
CAP
8-32
SETSCREW




RUBBER
TAPE
1"
2
ACTUAL SIZE


Heathkit
MOBILE TUNING METER
MODEL PM-2
HEATH COMPANY
BENTON HARBOR, MICH.
A SUBSIDIARY OF DAYSTROM INC.

Pictorial 3

( ) Start an 8-32 slot head setscrew in the small chrome knob and mount the knob on the shaft of the 100 K ohm potentiometer. Tighten the setscrew.

( ) Place the red binding post cap on the binding post firmly, but do not tighten excessively.

( ) Straighten the #10 wire and insert one end into the banana plug. Solder the wire by flowing solder completely around the top of the plug. The other end remains free and constitutes the antenna.

( ) Cut the rubber tape into four lengths 1/2" long. Peel the transparent tape from the sticky side and place one small 1/2" strip in each corner on the bottom of the cabinet. In like manner, install the identification label under the cabinet.

This completes the wiring and assembly of your PM-2 Mobile Tuning Meter.

OPERATING INSTRUCTIONS

Place the PM-2 in the vicinity of your transmitter or on the dashboard of your automobile and set the sensitivity control to its mid-point; then turn the transmitter on momentarily. Note the meter deflection. If the meter pins, rotate the sensitivity control counterclockwise until the meter reads 6 to 8. If the meter still pins, it may be necessary to shorten the pickup antenna slightly until a reading of 6 to 8 is obtained. If the meter reads low, it will be necessary to either place it closer to the transmitter or lengthen the antenna slightly.

In use, the PM-2 will show you at a glance whether or not your transmitter is radiating a signal. It may be used for tuning your transmitter to maximum power output.

The magnet is adjustable so that it may be set up or down or at any angle so as to secure the tuning meter in practically any position. Once the desired angle is set, the magnet and the bracket may be tightened.

NOTICE: If the PM-2 Power Meter is to be mounted in marine craft or airplanes, the possible effect of the magnet on the compass must be taken into consideration as well as the magnet incorporated in the meter.

IN CASE OF DIFFICULTY

In this event, your wiring should be thoroughly checked since, in an instrument of this simplicity, either an inadvertent wiring error or a defective component would be the major cause of difficulty.

The polarity of the meter and of the crystal diode are extremely important. If the meter tends to read backwards, reverse the leads of the crystal diode. The diode may be checked with an ohmmeter. The resistance will range from 100 to 200 ohms, with the negative lead of the ohmmeter on the BANDED end of the diode. With the negative lead on the opposite end of the diode, the resistance should be higher than 100 K.

The meter may be checked by the following method: Refer to the schematic diagram on page 2, and disconnect the diode from point "A". Rotate the sensitivity control FULL COUNTERCLOCKWISE. NOTE: Any other position could damage the meter. Place one lead of an ohmmeter on point "A". Place the other lead on point "B". The resistance should be approximately 100 K ohm. If no reading is obtained, either the 100 K ohm potentiometer or the meter is open. To determine which is open, check the potentiometer. WARNING: DO NOT ATTEMPT TO PLACE THE OHMMETER DIRECTLY ACROSS THE TUNING METER TERMINALS. In the event of continued difficulties, please refer to the following section, titled SERVICE.

If, after applying the information contained in this manual and your best efforts, you are still unable to obtain proper performance, it is suggested that you take advantage of the technical facilities which the Heath Company makes available to its customers.

The Technical Consultation Department is maintained for your benefit. This service is available to you at no charge. Its primary purpose is to provide assistance for those who encounter difficulty in the construction, operation or maintenance of HEATHKIT equipment. It is not intended, and is not equipped to function as a general source of technical information involving kit modifications nor anything other than the normal and specified performance of HEATHKIT equipment.

Although the Technical Consultants are familiar with all details of this kit, the effectiveness of their advice will depend entirely upon the amount and the accuracy of the information furnished by you. In a sense, YOU MUST QUALIFY for GOOD technical advice by helping the consultants to help you. Please use this outline:

1. Before writing, fully investigate each of the hints and suggestions listed in this manual under "IN CASE OF DIFFICULTY." Possibly it will not be necessary to write.
2. When writing, clearly describe the nature of the trouble and mention all associated equipment. Specifically report operating procedures, switch positions, connections to other units and anything else that might help to isolate the cause of trouble.
3. Report fully on the results obtained when testing the unit initially and when following the suggestions under "IN CASE OF DIFFICULTY." Be as specific as possible and include voltage readings if test equipment is available.
4. Identify the kit model number and date of purchase, if available. Also mention the date of the kit assembly manual. (Date at bottom of Page 1.)
5. Print or type your name and address, preferably in two places on the letter.

With the preceding information, the consultant will know exactly what kit you have, what you would like it to do for you and the difficulty you wish to correct. The date of purchase tells him whether or not engineering changes have been made since it was shipped to you. He will know what you have done in an effort to locate the cause of trouble and, thereby, avoid repetitious suggestions. In short, he will devote full time to the problem at hand, and through his familiarity with the kit, plus your accurate report, he will be able to give you a complete and helpful answer. If replacement parts are required, they will be shipped to you, subject to the terms of the Warranty.

The Factory Service facilities are also available to you, in case you are not familiar enough with electronics to provide our consultants with sufficient information on which to base a diagnosis of your difficulty, or in the event that you prefer to have the difficulty corrected in this manner. You may return the completed instrument to the Heath Company for inspection and necessary repairs and adjustments. You will be charged a minimal service fee, plus the price of any additional parts or material required. However, if the completed kit is returned within the Warranty period, parts charges will be governed by the terms of the Warranty. State the date of purchase, if possible.

Local Service by Authorized HEATHKIT Service Centers is also available in some areas and often will be your fastest, most efficient method of obtaining service for your HEATHKIT equipment. Although you may find charges for local service somewhat higher than for factory service, the amount of increase is usually offset by the transportation charge you would pay if you elected to return your kit to the Heath Company.

HEATHKIT Service Centers will honor the regular 90 day HEATHKIT Parts Warranty on all kits, whether purchased through a dealer or directly from Heath Company; however, it will be necessary that you verify the purchase date of your kit.

Under the conditions specified in the Warranty, replacement parts are supplied without charge; however, if the Service Center assists you in locating a defective part (or parts) in your kit, or installs a replacement part for you, you may be charged for this service.

HEATHKIT equipment purchased locally and returned to Heath Company for service must be accompanied by your copy of the dated sales receipt from your authorized HEATHKIT dealer in order to be eligible for parts replacement under the terms of the Warranty.

THIS SERVICE POLICY APPLIES ONLY TO COMPLETED EQUIPMENT CONSTRUCTED IN ACCORDANCE WITH THE INSTRUCTIONS AS STATED IN THE MANUAL. Equipment that has been modified in design will not be accepted for repair. If there is evidence of acid core solder or paste fluxes, the equipment will be returned NOT repaired.

For information regarding modification of HEATHKIT equipment for special applications, it is suggested that you refer to any one or more of the many publications that are available on all phases of electronics. They can be obtained at or through your local library, as well as at most electronic equipment stores. Although the Heath Company sincerely welcomes all comments and suggestions, it would be impossible to design, test, evaluate and assume responsibility for proposed circuit changes for special purposes. Therefore, such modifications must be made at the discretion of the kit builder, using information available from sources other than the Heath Company.

REPLACEMENTS

Material supplied with HEATHKIT products has been carefully selected to meet design requirements and ordinarily will fulfill its function without difficulty. Occasionally improper instrument operation can be traced to a faulty component. Should inspection reveal the necessity for replacement, write to the Heath Company and supply all of the following information.

A. Thoroughly identify the part in question by using the part number and description found in the manual Parts List.

B. Identify the type and model number of kit in which it is used.

C. Mention date of purchase.

D. Describe the nature of defect or reason for requesting replacement.

The Heath Company will promptly supply the necessary replacement. PLEASE DO NOT RETURN THE ORIGINAL COMPONENT UNTIL SPECIFICALLY REQUESTED TO DO SO. Do not dismantle the component in question as this will void the guarantee. This replacement policy does not cover the free replacement of parts that may have been broken or damaged through carelessness on the part of the kit builder.

SHIPPING INSTRUCTIONS

In the event that your instrument must be returned for service, these instructions should be carefully followed.

ATTACH A TAG TO THE EQUIPMENT BEARING YOUR NAME, COMPLETE ADDRESS, DATE OF PURCHASE, AND A BRIEF DESCRIPTION OF THE DIFFICULTY ENCOUNTERED. Wrap the equipment in heavy paper, exercising care to prevent damage. Place the wrapped equipment in a stout carton of such size that at least three inches of shredded paper, excelsior, or other resilient packing material can be placed between all sides of the wrapped equipment and the carton. Close and seal the carton with gummed paper tape, or alternately, tie securely with stout cord. Clearly print the address on the carton as follows:

To: HEATH COMPANY
Benton Harbor, Michigan

Include your name and return address on the outside of the carton. Preferably affix one or more "Fragile" or "Handle With Care" labels to the carton, or otherwise so mark with a crayon of bright color. Ship by insured parcel post or prepaid express; note that a carrier cannot be held responsible for damage in transit if, in HIS OPINION, the article is inadequately packed for shipment.

WARRANTY

Heath Company warrants that for a period of three months from the date of shipment, all Heathkit parts shall be free of defects in materials and workmanship under normal use and service and that in fulfillment of any breach of such warranty, Heath Company shall replace such defective parts upon the return of the same to its factory. The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of all other warranties, whether express or implied and of all other obligations or liabilities on the part of Heath Company and in no event shall Heath Company be liable for any anticipated profits, consequential damages, loss of time or other losses incurred by the buyer in connection with the purchase, assembly or operation of Heathkits or components thereof. No replacement shall be made of parts damaged by the buyer in the course of handling or assembling Heathkit equipment.

NOTE: The foregoing warranty is completely void and we will not replace, repair or service instruments or parts thereof in which acid core solder or paste fluxes have been used.

HEATH COMPANY

All prices are subject to change without notice. The Heath Company reserves the right to discontinue instruments and to change specifications at any time without incurring any obligation to incorporate new features in instruments previously sold.

PARTS LIST

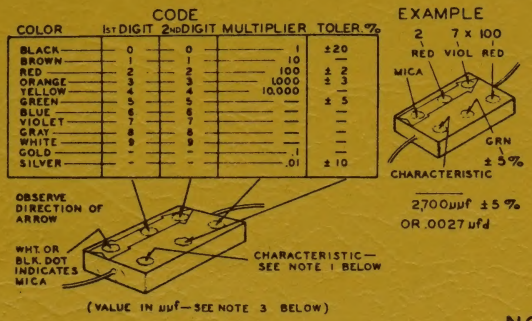
PART No.	PARTS Per Kit	DESCRIPTION
10-71	1	100 KΩ potentiometer
21-16	1	.01 μfd disc ceramic capacitor
45-4	1	1.1 mh RF choke
56-4	1	Diode
73-M16	1	Length rubber tape
75-17	2	Binding post bushing
90-M99F	1	Cabinet shell
100-M16R	1	Binding post cap
203-M171F	1	Front panel
204-M224F	1	Magnet bracket
205-M141	2	Magnet pole piece
250-15	1	8-32 x 1/8" slot head setscrew
250-49	8	3-48 x 1/4" PHMS
250-134	1	6-32 x 3/4" brass RHMS
252-1	8	3-48 nut
252-3	3	6-32 nut
252-7	2	3/8" x 32 nut
253-1	1	Fiber washer
253-10	1	3/8" flat washer
253-40	1	Steel washer
254-1	1	#6 lockwasher
254-4	1	3/8" lockwasher
254-7	8	#3 lockwasher
259-1	1	#6 solder lug
340-4	1	Length #10 bare wire
390-65	1	Identification label
407-61	1	200 μa meter
427-2	1	Binding post
438-16	1	Banana plug
462-130	1	9/16" control knob
474-1	1	Ferrite magnet
331-6		Solder
595-251	1	Manual

462-30 1 Knob

CAPACITOR COLOR CODES

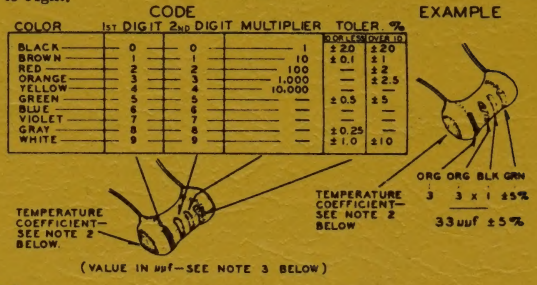
Generally, only mica and tubular ceramic capacitors, used in modern equipment, are color coded. The color codes differ somewhat among capacitor manufacturers, however the codes shown below apply to practically all of the mica and tubular ceramic capacitors that are in common use. These codes comply with EIA (Electronics Industries Association) Standards.

MICA


CODE
COLOR
1ST DIGIT
2ND DIGIT
MULTIPLIER
TOLER.%
BLACK 0 0 1 ±20
BROWN 1 1 10 —
RED 2 2 100 ± 2
ORANGE 3 3 1,000 ± 3
YELLOW 4 4 10,000 —
GREEN 5 5 — ± 5
BLUE 6 6 — —
VIOLET 7 7 — —
GRAY 8 8 — —
WHITE 9 9 — —
GOLD - - .1 —
SILVER - - .01 ± 10
OBSERVE DIRECTION OF ARROW
WHT. OR BLK. DOT INDICATES MICA
CHARACTERISTIC— SEE NOTE 1 BELOW
(VALUE IN μμf—SEE NOTE 3 BELOW)

TUBULAR CERAMIC

Place the group of rings or dots to the left and read from left to right.


CODE
COLOR
1ST DIGIT
2ND DIGIT
MULTIPLIER
TOLER. %
10 OR LESS
OVER 10
BLACK 0 0 1 ±2.0 ±20
BROWN 1 1 10 ±0.1 ±1
RED 2 2 100 — ±2
ORANGE 3 3 1,000 — ±2.5
YELLOW 4 4 10,000 — —
GREEN 5 5 — ±0.5 ±5
BLUE 6 6 — — —
VIOLET 7 7 — — —
GRAY 8 8 — ±0.25 —
WHITE 9 9 — ±1.0 ±10
TEMPERATURE COEFFICIENT— SEE NOTE 2 BELOW.
TEMPERATURE COEFFICIENT— SEE NOTE 2 BELOW
(VALUE IN μμf—SEE NOTE 3 BELOW)

NOTES:

1. The characteristic of a mica capacitor is the temperature coefficient, drift capacitance and insulation resistance. This information is not usually needed to identify a capacitor but, if desired, it can be obtained by referring to EIA Standard, RS-153 (a Standard of Electronic Industries Association.)

2. The temperature coefficient of a capacitor is the predictable change in capacitance with temperature change and is expressed in parts per million per degree centigrade. Refer to EIA Standard, RS-198 (a Standard of Electronic Industries Association.)

3. The farad is the basic unit of capacitance, however capacitor values are generally expressed in terms of μfd (microfarad, .000001 farad) and μμf (micro-micro-farad, .000001 μfd); therefore, 1,000 μμf = .001 μfd, 1,000,000 μμf = 1μfd.

HEATH COMPANY

BENTON HARBOR MICHIGAN

a subsidiary of

DAYSTROM, INCORPORATED

THE WORLD'S FINEST ELECTRONIC EQUIPMENT IN KIT FORM

595-251

LITHO IN U. S. A.